

CLAIMS

What is claimed is:

Sub B1
1. A dual band radio receiver comprising:
a local oscillator configured to generate a Local Oscillator (LO) signal;
a first mixer device configured to receive said LO signal and a first Radio Frequency (RF) signal included within a first band and responsively to output a first Intermediate Frequency (IF) signal;
a second mixer device configured to receive said LO signal and a second RF signal included within a second band and responsively to output a second IF signal;
and
wherein said local oscillator is configured to operate within a third band located between said first and second bands.

2. The dual band radio receiver of claim 1 further comprising first and second IF filters and a switching device coupled thereto, wherein said first and second IF filters are coupled to said first and second mixer devices respectively.

3. The dual band radio receiver of claim 2 further comprising a control circuit coupled to said local oscillator device and to said switching device.

Sub A1
4. The dual band radio receiver of claim 1 wherein said first band is substantially within approximately a frequency range of 1.910 GHz and 1.930 GHz.

5. The dual band radio receiver of claim 1 wherein said second band is substantially within approximately a frequency range of 2.40 and 2.4835 GHz.

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6. The dual band radio receiver of claim 1 wherein said third band is substantially between approximately 2.155 GHz and 2.2385 GHz.

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7. The dual band radio receiver of claim 1 wherein said third band is positioned approximately half-way between said first and second bands.

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8. A system comprising:
a transmitter circuit; and
a dual band radio receiver coupled to said transmitter, said dual band radio receiver including
a local oscillator configured to generate an LO signal;
a first mixer device configured to receive said LO signal and a first RF signal included within a first band and responsively to output a first IF signal,
a second mixer device configured to receive said LO signal and a second RF signal included within a second band and responsively to output a second IF signal, and
wherein said local oscillator is configured to operate within a third band positioned between said first and second bands.

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9. The system of claim 8 further comprising first and second IF filters and a switching device coupled thereto, wherein said first and second IF filters are coupled to said first and second mixer devices respectively.

10. The system of claim 9 further comprising a control circuit coupled to said local oscillator device and to said switching device.

1 11. The system of claim 8 wherein said first band is substantially within
2 approximately a frequency range of 1.910 GHz and 1.930 GHz.

1 12. The system of claim 8 wherein said second band is substantially within
2 approximately a frequency range of 2.40 and 2.4835 GHz.

1 13. The system of claim 8 wherein said third band is substantially between
2 approximately 2.155 GHz and 2.2385 GHz.

1 14. The system of claim 8 wherein said third band is positioned approximately
2 half-way between said first and second bands.

1 15. In a dual-band radio receiver configured to receive Radio Frequency (RF)
2 signals within first and second bands, a method for converting an RF signal into an
3 IF signal, the method comprising the steps of:

4 a) determining whether said RF signal belongs to one of a first and a second
5 bands; and

6 b) if said RF signal belongs to one of said first and second bands generating said
7 IF signal by mixing said RF signal with a LO signal belonging to a third band located
8 between said first and second bands.

9 16. The method of claim 15 wherein said step b) includes the step of:
10 if said RF signal belongs to said first band, driving said RF signal and said LO
11 signal to a first mixer device.
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16 ¹⁵~~17~~. The method of claim ¹³~~15~~ wherein said step b) includes the step of,
17 if said RF signal belongs to said second band, driving said RF signal and said
18 LO signal to a second mixer device.

¹⁹ ¹⁶/₁₈ ¹³/₁₅

1 The method of claim ¹³/₁₅ wherein said third level is substantially half-way
2 between said first and second bands.

1 19. The method of claim 15 wherein said first band is substantially within
2 approximately a frequency range of 1.910 and 1.930 GHz.

1 20. The method of claim 15 wherein said second band is substantially within
2 approximately a frequency range of 2.40 and 2.4835.

21. A method for providing a dual band radio receiver, the method comprising the steps:

3 providing first and second mixers;
4 providing a circuit configured to determine whether an RF signal input
5 thereto belongs to one of a first and second bands, said circuit coupling said RF
6 signal to one of said first and second mixers if said circuit determines that the RF
7 signal belongs to one of a first and second bands respectively; and
8 coupling a local oscillator to said first and second mixers, said local oscillator
9 configured to generate signals within a third band that is positioned approximately
10 mid-way between said first and second bands.